

AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions of claims in the application.

Listing of Claims:

1. (Currently amended): An automatic door apparatus comprising:
 - a pair of doors opening and closing by moving on a same vertical plane;
 - a pair of moving device moving the pair of doors individually;
 - a controller controlling the pair of moving device;
 - a pair of two-dimensional image sensors for detecting a moving object at both sides of the pair of doors; and
 - a pair of spare sensors for detecting a moving object at both sides of the pair of doors, wherein the controller includes:
 - an image processor processing an output of the two- dimensional image sensors;
 - a moving status calculator individually recognizing the moving object and calculating a position and a moving direction of [[a]] the moving object from an image processing signal of the image processor by image processing of outputs of the two-dimensional image sensors wherein the moving status calculator judges if the image processing is disabled or not due to an apparatus trouble or due to an optical condition;
 - an opening degree calculator
 - predicting a passing position of the moving object on the vertical plane on the basis of the position and moving direction of the moving object calculated by the moving status calculator and calculating a target opening degree of each of the doors on the basis of the predicted passing position when the moving object approaches, and
 - determining the target opening degrees of the doors in fully closed state when the moving

object moves away;

a first move command unit outputting move command signals to the pair of moving device so that the doors may be opened to the calculated target opening degrees; and

a second move command unit outputting move command signals to the pair of moving device to open the doors fully immediately or after the moving object is detected by the spare sensor if the moving status calculator cannot calculate the position and moving direction of the moving object due to individual recognition failure of the moving object in the crowd although the moving status calculator judges ~~can perform~~ the image processing is not disabled.

2. (Canceled)

3. (Previously Presented): An automatic door apparatus according to claim 1, wherein the controller selects a largest opening degree, as the target opening degree of the door, from plural target opening degrees corresponding to plural moving objects calculated by the opening degree calculator.

4. (Previously Presented): An automatic door apparatus according to claim 1, wherein the moving status calculator has an opening speed calculator calculating a moving speed of each moving object and calculating an opening speed of the doors on the basis of the fastest moving speed among the calculated moving speeds, and the first move command unit outputs a move command signal so as to open the doors at the opening speed.

5. (Previously Presented): An automatic door apparatus according to claim 1, wherein a zone detected by the two-dimensional image sensor includes a first zone remote from the doors, and a second zone adjacent to the first zone and closer to the doors than the first zone,

the moving status calculator calculates the moving status of the moving object on the basis of the motion of the moving object in the first zone, and

the opening degree calculator calculates the target opening degree when the moving object moves from the first zone to the second zone, and the first move command unit outputs the move command signal.

6. (Previously Presented): An automatic door apparatus according to claim 1, wherein a zone detected by the two-dimensional image sensor includes a first zone remote from the doors, and a second zone adjacent to the first zone and closer to the doors than the first zone, and the opening status calculator sets the target opening degree in full closing when the moving object moves from the second zone to the first zone, and the first move command unit outputs the move command signal.